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OPENING LECTURE
AT THE
TWENTY-THIRD ANNUAL COURSE OF LECTURES RUSH MEDICAL COLLEGE.

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[Published by request of the class.]

GENTLEMEN:—

I have the honor to have been selected by my colleagues to convey to you their cordial welcome to the Lecture Rooms of this Institution, and to express their satisfaction that so many who have previously, and so many who have not heretofore, attended their lectures are present, to exchange greetings with them, on this the first day of the Twenty-third Annual Course of Lectures of Rush Medical College.

It is with much pleasure that, after an absence of several years, I find myself once more restored to peaceful avocations and resuming duties which, for years past, I have performed in this institution. Though I have regretted the long absence

which I thought was imposed upon me by my duty to the Federal Government, after that I had once enrolled myself on the Medical staff of the army of the Union, I can not regret for a moment the experience which I have had, or the humble service which I have been privileged to render in the glorious cause of the assertion of the integrity of the Union of these United States, and the establishment of universal freedom to all those who respect the rights of other citizens of a common country.

Gentlemen, our country has passed successfully through a crisis and a contest such as no other country, of ancient or of modern days, has ever experienced. Those only, who have taken part in the contest, can appreciate the fierce fury of the conflict when Greek met Greek. At last victory has perched upon our banners, and peace with her genial influences, has once more kindly resumed her sway over our great and still glorious republic. The fierce onslaught of contending hosts has passed; the roar of artillery and the rattle of musketry is no longer heard in the land; the bulletins no longer report the thousands of killed and wounded. Thanks be to God, the struggle of brethren who should have been linked in the most indissoluble fraternal bonds, for the common good, and for the cultivation of peaceful arts, is over, and a sweet, gentle peace falls, like a soft and kindly twilight, over all the land, hushing to silence all discordant sounds, and preparing all for the sweet repose which follows unusual exertion. God grant that the dawn of a new era, when science, literature, and art may flourish as never before, may be the result of the bright prognostics of the sunset of our late lamentable, but unavoidable struggle.

Gentlemen, those of you who are about to prepare yourselves for a professional life, if living to the ordinary age usually granted to those who pursue the liberal professions, will see great things. Your lines have fallen in pleasant places. Do your duty, and your whole duty to yourselves in preparation for your work, and the times themselves will afford you

opportunities for success, for usefulness, and for personal celebrity, such as your predecessors in the Medical profession have never known. Only be true to yourselves and community will recognize and appreciate your qualifications, and demand your services.

Your opportunities for acquirement of the principles of the profession you have chosen are almost unlimited. All the knowledge which has been accumulated by ages of observation and experience, is at your command. It has been quaintly said that children begin where their parents leave off. If or not this be true in the domestic relations, it is eminently true when predicated of the liberal professions, provided always that the pupil avails himself, to the extent of his ability, of the experience and knowledge acquired by his predecessors. Excepting under oppressive governments, which have temporarily stifled its efforts, science has never gone backward. Only in the dark ages were the arts lost. In a liberal age, and in a liberal community, under a liberal government, science always advances. Every age adds to her treasures, and upon those who have the privilege of benefiting by the labors of a previous age, rests the responsibility, not to themselves alone but to the age in which they live, to community, to science herself, of whom they profess to be votaries, that they will not squander, but will add to the bountiful wealth which has been prepared for their entertainment; a wealth of knowledge earned by the labors of thousands, who have worked earnestly and faithfully in her cause, many of whom have gone to their last rest, unknown and unsung, but will reap the ripe fruits of their labors in the cause of humanity in a better and more appreciative atmosphere.

Gentlemen, I do not propose to attempt to impress upon you the importance to our common humanity of the studies in which you are about to engage, or the necessity of rendering yourselves proficient as far as practicable, before engaging in the actual practice of your chosen profession. Your presence here with the intention severally to devote your lives to the

practice of the Medical profession, sufficiently attests your appreciation of the importance of proficiency, and the value to community of the science which you have espoused. It would, then, be almost an insult to you to present on this occasion the benefits which our noble profession has heretofore, and still continues to confer upon mankind, though I regret to say that frequently the individuals benefited by their labors are so unappreciative as not to recognize the man of scientific acquirements, profound investigation and solid attainment, from the miserable empiric whose foul advertisements taint the atmosphere and corrupt the moral sense of intelligent communities. But so it must ever be, so long as vice and immorality exist in our large cities and superficiality in the intellectual training of our youth, so long also as wealth is to be considered the first object to be obtained, and so long as vice is winked at and even apologized for in public society.

True science can only flourish and receive its proper appreciation when society is itself intelligent, and its morals pure. In the foul and pestilential atmosphere of a polluted and crowded population, all kinds of vermin and parasites find the proper conditions for their developement, existence and reproduction, and all precautions which may be taken to prevent contagion will fail, unless the atmosphere is purified and the conditions changed. Hence it is that Quackery, from the most infinitesimal to the most magnificent of its various forms, finds its home in large cities, where there exists the most perverted ideas of morals and the grossest exhibitions of vice. Under such conditions it is curious to observe that the public press, which professes to be, and should be, the censor of the morals of community, lends itself to the diffusion and perpetuation of these swindles on the masses. But still more to be reprobated and regretted, members of other liberal professions, (there are, I am happy to say, most honorable exceptions,) ignorantly, but no less injuriously, lend themselves by certificates to quack advertisements and recommendations of

nostrums, to perpetuate and encourage the inherent tendency of the masses to accept empirical systems and employ empirical practitioners. But enough of this, the foe, if foe it be, is not worthy of our fire, except to protect the ignorant. Our ammunition is wasted, if we contend with these excrescences on society. Guerillas should be hung, not shot. So long as there are fools there will be quacks; the millenium is not yet.

Now, if your desire is to be and become learned and honorable members of the medical profession, a course of study is to be pursued which should be well laid out, your plans drawn and your determination fixed to follow that plan to its consummation. And in this regard, I have first to say that a preliminary education is of the first and highest importance to every student, not only of our own but of any liberal profession. As regards the amount of previous education required to enable the student to master the profession of medicine, authorities and the committees of conventions and associations differ, but all agree that a good grounding in all the branches of an ordinary English education is absolutely necessary to success, and that some knowledge of the Ancient Latin and Greek languages, materially facilitate the acquisition of the principles of our profession. Excepting in unusual instances where genius has overridden the rules which govern the general proposition; the cases are rare in which high position has been attained without preliminary education.

Permit me then, gentlemen, to exhort you that, if you feel the want of previous education, you will endeavor, without delay to repair your deficiency; with industry, it may be done while still pursuing your course of studies, delaying somewhat, perhaps, your reception of your diploma, but, if effected, on entering the ranks of the profession at the completion of your course of studies, it will be with advantages which tenfold repay you for the delay. I have been incited to make these remarks because of the fact that there is a disposition, stronger perhaps, in the West than in the older and more developed portions of our country, an almost unconquerable disposition, in

young men especially, to push forward to the goal they have set before them, and that with insufficient training before entering the arena. In the Olympic games of ancient Greece severe training was submitted to before the contest was accepted, or the contestants permitted to enter the course. This haste, except in extraordinary cases where genius surmounts all precedents, is not only injudicious, but almost invariably condemns a man, whatever his industry, to simple mediocrity for a long period of his early professional life, and unless he has a powerful will, strong hope and unflagging industry, he is apt to despair of success, while inferior minds, with the advantage of a good preliminary education, will distance him in the race.

The most important step in your advance to professional attainments is this: That you become thoroughly grounded in the rudimentary branches of the profession. First in order of importance, perhaps, comes Anatomy — the science which teaches the structure of the human frame, that most perfect of all machines which God himself has yet constructed, wonderful in the beauty of its proportions; wonderful in its adaptation to the varied uses demanded of its several parts; wonderful in its power of self-repair; wonderful in its resistance against abuse of natural laws; wonderful that it can, in exceptional cases, exist a hundred years, resisting all diseases, all climates, and all conditions of life; still more wonderful in its connection with and dependence upon that invisible essence, the soul of man, which controls, modifies, regulates, or abuses this most wonderful of all machines.

Should the superintendent of any of our railroad companies employ, to take charge of and manage a locomotive engine, a man who was not fully and perfectly conversant with all its parts, the object of each and every part, the mode and manner in which the vital energy of heat converting water into steam acts upon and through each valve, on every lever, on every crank, and on every wheel, he would be thought derelict of duty, and held responsible by an indignant community, for the loss of life and property consequent upon the ignorance of his

employee. Yet, forsooth, any ignoramus who, by flaming advertisements, and fulsome self-adulation, obtrudes himself upon public notice, will find fools who will trust that most perfect, most intricate and delicate piece of workmanship to the hands of a man, or rather a madman, who never saw the interior of the machine, has no knowledge of its mode of working, does not know where are its valves, or what the power, or how it propels its separate parts—in a word, is as totally ignorant as a child unborn of the subject he is acting on, or the means he is using to remedy its aberrations,

Suppose, gentlemen, that either of you had a valuable watch, perhaps an heirloom in your family. It has become deranged in its movements; it is not reliable in recording the hour; what would you do? Would you go to a blacksmith to have it repaired? or to a scissors-grinder? No, you would say—this man may be expert to shoe my horse, but he may not touch my watch. And why? Because he does not understand its anatomy and physiology. You would even hesitate to employ a watch-makeor until you were certified by indisputable references that he understood thoroughly its mechanism, and how to remedy the derangement of your treasure.

Yet, strange as it may seem, there still exists in this nineteenth century, men who profess to practice upon the intricate mechanism of the human body, who have never seen and who have not the slightest knowledge of its interior structure. Truly it has been said that it is strange that "a harp of a thousand strings should stay in tune so long."

The science of Anatomy stands, as I have said, at the foundation of medical science. It is the corner-stone, and upon its faithful acquirement depends the whole success of the future candidate for professional honors. Having become proficient in this branch of the profession, the department of Physiology next claims your attention. It will teach you the mode of operation of the vital forces, which act upon and keep in constant motion this intricate machine.

The study of Pathology will instruct you in the aberrations in the movements, and the changes of structure which result from disease. Therapeutics, Materia Medica and Chemistry, will supply you with a knowledge of the mode of action, and the materials with which to remedy such aberrations. Surgery supplies and directs the application of the instruments in the treatment of those cases and conditions in which the more subtle remedies of the Pharmacopœia fail to relieve, which for the most part are injuries which occur from the applications of external force, or from hidden causes which produce abnormal growths and excrescenses. Obstetrics will inform you of the laws of birth and generation—the starting point of human existence—and the management of delivery, or the ushering of this fleeting body into this fleeting world.

The practice of Medicine is the department which instructs you how to diagnose disease, to recognize the existence of various pathological changes, and suggests the remedies to be applied, which are furnished by the Pharmaceutist. With all and each of these branches must you become familiar before you can enter even the threshold of the Medical Profession.

Now, gentlemen, with this curriculum laid out before you, you must perceive that the term allowed for the existence of any individual is too short to permit the acquisition of a perfect knowledge of every branch of this vast field of study. In the older and more developed countries of Europe, the subdivision of labor and of studies has come to be recognized as the main condition essential to success. In this country, where society may be said to be yet in a transition state from the more primitive to the most cultivated, the subdivision of studies, so far as the liberal professions are concerned is yet looked upon with jealous eyes, and the man who dares to announce that he has devoted his time, his labor, and his life, to the special cultivation of a particular department of Medical Science, is by many, not only of the uninformed, but by men of standing in the profession itself, characterized as approaching, if not actually having arrived at, the position o

an Empiric. Never was there a greater mistake. There is an ancient proverb which says, "Beware of the man of one book," which strictly applies to the matter of specialities in the medical profession.

If it be true that no one can perfect himself in all, why should he not in one branch of study? Instead of a feeble incompetency, he could offer himself as a competent servitor to the public in the matter of his specialty. For one I advise that you select for yourselves, as soon in your course as practicable, a particular branch of medical study to which, after the due acquirement of the rudimentary branches, you propose to devote yourself. Having made your selection, let your course of studies thereafter, while not neglecting others, tend specially to that branch which you may have selected as your speciality. You will thus probably, if you have ordinary ability, attain eminence when otherwise you would be obliged, by diluting your efforts in the attempt to turn your attention into too many channels, fall into a meagre mediocrity.

I have endeavored, gentlemen, to give you a simple outline of the course of studies you are about to adopt, and briefly to indicate to you your duty to yourself and the profession.

Take as your maxim the ancient aphorism, "*Ars longa vita brevis est*"—Art is long and life is fleeting. Remember that no one mind can comprehend or bring into useful application all of science. That in the study of Medicine you have, as were, three separate problems to solve—Life, Disease, Death. Your object is to preserve Life, to prevent or cure Disease, and to prevent death. This is the task, and these the problems you have to solve as Students of the Medical Profession. Are you prepared, and will you submit to the labor necessary to render yourselves competent to perform these duties? are the questions that I leave for your own consideration.

THE PREVENTION OF EPIDEMIC CHOLERA.

By S. S. SALISBURY, M. D., of Tolono, Ills.

Epidemic Cholera, being again prevalent, and there being as yet no means of prevention known: I will submit the following facts for the consideration of the medical public.

It is an established fact, that Arsenic, if given in small and repeated doses, may have its poisonous operation averted by keeping the kidneys in active operation at the same time. The close resemblance between the action of arsenic and antimony, and the poison that produces epidemic cholera, leads me to the conclusion that the poison that produces epidemic cholera, must be a material substance, and that its poisonous operation may be averted in the same way.

The poison that produces this disease must necessarily enter the system gradually, whether it be absorbed by the lungs, the skin, or swallowed in the saliva, and at the same time it is gradually passing out of the system by the excretory organs, enabling them to carry off a larger quantity of the poison, and thereby prevent an accumulation of it in the system sufficient to develop the disease, or at least by this means mitigate its violence.

The operation of diluents in preventing strangury when cantharies is absorbed, is a fair example of the idea I wish to convey. In this case we merely, by adding to the quantity of water in the blood, cause the kidneys to excrete a larger quantity of water, which in its passage carries out with it the irritating substance, and prevents its accumulation in the blood.

We know that persons whose excreting organs, and particularly the kidneys, are impaired, which interferes with the proper performance of their function, are more susceptible to

the influence of poisons, and this class are more easily affected by cholera and all epidemic and infectious diseases. While on the other hand, those whose excretory organs are in active operation more effectually resist the action of these poisons, and this class of diseases. Although at each visit of cholera we see habitual drunkards and persons with broken down constitutions, that have the functions of their excretory organs impaired, fall thick enough, I think it would be a difficult matter to find a subject of diabetes that had been attacked with cholera.

Cider has been observed to be, to a certain extent, a preventive of epidemic cholera, by the English physicians. The same may be said of our own country. The great fruit country of East Tennessee and Southern Kentucky was affected lightly by the cholera during its last visit to this country, and it was observed by the common people that those who used cider constantly and freely, escaped. This article was manufactured abundantly there, and used as a common drink. That class of ripe fruits and vegetables, the use of which has been thought by some to prevent, rather than provoke an attack, will, on examination, be found to possess diuretic properties.

The following incident has come to my knowledge: During the last visit of epidemic cholera to this country, it prevailed in a small town in Kentucky, and eight or nine young men employed themselves in nursing the sick, and burying the dead; this was at a season when melons were abundant, of which these young men all ate freely the whole time, none of them suffered with any symptom of the disease, although a large proportion of the inhabitants were attacked.

The waters of some of the sulphur springs of this country have attained a degree of celebrity among the people living in their vicinity, for the prevention of cholera. Of these the spring at Delaware, Ohio, and some of the sulphur springs of Kentucky, may be mentioned particularly, and they contain Hydrosulphuric Acid Gas, and may be drank in large

quantities without inconvenience, and pass off as rapidly by the kidneys.

The exemption obtained by the use of these articles, has been attributed in one case to the presence of Acid in the blood, and in the other to the presence of Sulphur. They all, however, possess one common property—they are diuretic, either by direct action, or by the quantity taken.

I will suggest the constant use, during the prevalence of the epidemic, of dilutent diuretics, of that class that are neither emetic or cathartic, and of these Mineral (Carbonic Acid) Waters, Acetate of Potass largely diluted, or pure Cream Tartar, in small doses, might be found useful and agreeable. I think the conclusion is a fair one, that if this class of articles was used during the prevalence of the epidemic, it might either be prevented, or at least, its violence mitigated.

AN INTERESTING CASE OF HEMIPLEGIA.

By MORTON M. EATON, M. D., of Peroia, Ill.

Was called about two weeks since to see the daughter of Mr. M., of this city, aged 14 years.

Found her suffering from Hemiplegia. The left leg and arm were insensible to pain and motion extremely difficult, seemingly from want of power. The face wore a natural expression, the tongue inclined to the left side. The pulse was natural on the right side; the affected members were cold, while the other parts of the body were of a normal temperature. The tongue was clean; respiration natural.

My patient was able to converse readily, and from her and her mother I learned that she had never menstruated; that

this attack had been coming on for three days, beginning with numbness; that about two months before she had been troubled with a numbness in these members, and a pain in the back and thighs; that the bowels were regular; the appetite was impaired. I examined the spine carefully, but found no indications of any abnormal condition; the brain also seemed in healthy operation.

Having found no evidences of disease, and from the fact of her never having menstruated, I examined the hypogastric region and found much tenderness, and passing my finger between the labia and finding no hymen, I proceeded to pass my finger internally, which caused no pain till I came in contact with the os uteri, when I found that the womb was much inflamed, and extremely sensitive. This being the state of affairs, I determined to direct my attention mainly to this condition of the womb. I applied warm fomentations of hops over the hypogastric region, wrapped the affected limbs in flannel, and made the following prescription: ℞.—Pill Hydrarg. gr. x; Ferri Pulv. gr. v; Rhei Pulv. gr. x; Quin. Sul. gr. v; Strychnia Nit. grss.—M. Pill No. xv., div. S.—Take one three times a day.

Under this treatment she rapidly improved, the tenderness and congestion disappearing; the power of motion and feeling returned within a week, and the limbs have regained their natural temperature.

The case was new to me because of its occurring in the virgin. I have consulted those authors that were at hand, and I find no cases of this recorded, though Dr. Churchill, in treatise on Diseases of Women, page 732, states that "A nervous or hysterical paralysis may occur occasionally in the unimpregnated state."

Dr. Simpson says Albuminuria in the impregnated state sometimes gives rise to local paralysis, functional lesions, &c.

Dr. Romberg says, in his work published by the "Sydenham Society," that paralytic attacks, arising from morbid con-

ditions of the sexual system, through reflex influence upon the spinal cord, affect both sides.

I hope if other physicians have had similar cases, or can better explain the cause or the symptoms, than that the retention or non-appearance of the menses had caused an engorged and congested state of the uterus, and that this engorgement, by some means acting by means of reflex action on the spinal cord, caused the coldness, insensibility and loss of motion, we may hear their theory. I can see but one other way of explaining the case, that is, that we are aware that the suppression of the menstrual secretion frequently causes congestions of distant organs, and that possibly there was present a fullness of the spinal arterial twigs of sufficient magnitude to cause pressure on the side of the spinal cord. I shall recommend for the next too weeks, warm hip baths and the administration of small doses of Iron, Aloes and Myrrh, thinking that if the menstrual functions were fully established, she would have no return of these troubles, and fearing and expecting that if it is not established, that she may be attacked again as before in one or two months.

CLINICAL LECTURES ON DISEASES OF THE EYE.

By E. L. HOLMES, M. D., of Chicago,

Lecturer on Diseases of the Eye and Ear in Rush Medical College, and Surgeon to the Chicago Charitable Eye and Ear Infirmary.

CATARACT.

GENTLEMEN:

Cataract is an abnormal change in the form and character of the cell elements of the lens, producing opacity. Its chief symptoms are, the presence of a cloudy appearance either in

or behind the pupil, and a greater or less indistinctness of vision.

You will find no difficulty in the diagnosis of this disease, if you have formed the habit of examining carefully the eyes of different individuals in health, observing the appearance of the surface of the cornea and the condition of the pupil.

In the incipient stages of cataract, where there may be doubt, you can easily remove the doubt by dilating the pupil with atrophia, and throwing into it, by means of a concave reflector or a double convex lens, the concentrated light from a window, or better, the light of a candle in a darkened room. The strong light thus thrown upon any opaque substance that may exist behind or in the pupil, will so illuminate it, that it can readily be discovered on looking obliquely from different directions into the eye. In the absence of a mirror or lens, a small piece of looking glass may be used as just described, with advantage in the examination of cataract.

A little care will prevent you from confounding cataract with opacity of the cornea and save you the mortification of sending patients, with the latter disease, to some distant oculist for the removal of cataract, as has not unfrequently been done even by physicians of long experience.

A few words will suffice to explain the important points in the pathology of cataract. The lens, from abnormal nutrition, receives or loses undue proportions of certain elements. The solid or fluid materials may be in excess. The cells may contain too much fat or too much lime. Water may be absorbed in such quantities into the lens, as to disarrange and soften its cell structure. With fat globules there may be minute crystals of cholesterine, presenting a very beautiful appearance under the microscope. A peculiar form of "fatty degeneration" seems to occur as the principal feature in nearly all cataracts.

It should be remembered that the capsule resists to a remarkable degree all tendencies of abnormal conditions of the eye to render its tissue opaque. While the substance itself of both

the cortical portion and kernel of the lens may be so changed in character, that they become opaque, the capsule, except in rare instances, retains its perfect normal structure, any apparent opacity being caused by the deposit of cells upon its surface. A comparison in this respect might be made between the capsule and lens, in abnormal conditions of the eye, producing cataract, and a thin plate of fine glass becoming apparently opaque on exposure to the influences of moisture and dust.

Iritis and penetrating ulcers of the cornea often produce a deposit of opaque lymph upon the anterior surface of the capsule. Chronic choroiditis is very liable to so disturb the nutrition of the lens as to render it opaque. Concussions often produce cataract. In such cases the cataract often seems to depend upon a rupture to a greater or less extent of the zonula of zinn.

Punctures of the lens are a frequent cause of cataract by permitting an undue imbibition of aqueous humor.

The causes of idiopathic cataract are very obscure. Advanced age and infancy seem especially liable to it. While I have generally found aged cataract patients in good health, I have observed that infants with congenital cataract almost always present signs of arrested development. Diabetes and long use of rye bread impregnated with ergot, are said to induce cataract. It is sometimes hereditary.

The disease may extend through the whole substance of the lens and over the whole surface of the capsule, or it may be confined to a very small central kernel; to one delicate lamina of the lens, or even to a small disk in one of its layers.

Cataracts are usually classified as cortical, central or capsular, referring to the portion affected—and hard or soft, according to the degree of induration.

You have had opportunities of examining nearly every form of cataract at the clinic.

By calling to mind these cases you will now better comprehend their nature. In the case of the young child with congenital cataract, the lens really resembled a transparent sack

filled with milk. On puncturing the lens with the needle, the anterior chamber became filled with white fluid, in which was floating minute cloudy flakes. The lens had, as it were, become fluid. In the boy from whom I extracted the two cataracts through linear incisions in the cornæ, the whole of each lens was slightly opaque, with a small central portion almost perfectly white, both portions being soft.

In the case of the old lady, whom a few of you saw recently, the cataract was peculiar. You remember that when the pupil was dilated, the whole pupillary disk presented an almost uniform thick cloudy appearance. Whenever the patient turned her head from one side to the other, a small yellow body was observed to be in different positions against the anterior part of the capsule. As the cataract passed through the cornea with the capsule unruptured, it was found that the capsule was filled with a thin milky fluid, surrounding a small but very hard central kernel of the lens.

In one case the cataract had become liquefied, and finally absorbed, leaving the anterior and posterior halves of the capsule floating in close union with each other behind the pupil.

Less frequently in fluid cataracts the oil globules are found deposited in such quantities, that they unite in one large drop and float upon the other fluid.

The so-called black cataract is produced by the exudation of blood in the anterior chamber, the coloring matter of which becomes infiltrated through the capsule into the superficial layers of the lens.

Calcareous deposits in the lens sometimes depend upon chronic inflammation of the choroid and iris, as seemed to be the case in the boy, upon whom I performed Iridectomy with extraction of the peculiar chalky cataract.

From these and other examples of cataract which you have examined, you are able to understand readily nearly every case you may hereafter meet. The abnormal processes which

produce cataracts are nearly identical in all cases; different varieties being but modifications of the same disease.

The differential diagnosis of the varieties of cataract is usually without difficulty, although, there may be occasional uncertainty regarding hard and soft cataract.

It is well to remember that before the age of thirty, cataracts are generally soft; in advanced age, hard. The presence of a central yellow-colored portion is often indicative of hard cataract. Soft cataracts are generally more rapid in their development than hard.

Nearly all hard cataracts are surrounded by soft cortical substance, resembling boiled starch.

Cataract may be complicated with amaurotic disease of the choroid, retina and optic nerve. Whenever the pupil is inactive under the influence of alternate light and shade, or dilates very slowly and imperfectly, from the use of atropia, and when a patient cannot see the light of a candle at night at the distance of fifteen feet, there is reason to fear that the removal of the cataract would not restore good vision.

Medical treatment of cataract is almost absolutely without benefit. Surgical interference is the only reliable means of relief. This usually consists in the use of the needle or of the knife. By the former instrument, the opaque lens is either depressed below the pupil behind the iris, or broken up and left in the eye to be absorbed. By the latter an incision is made in the cornea, through which the cataract is removed in substance.

For the discussion of the question whether to operate, when only one eye is affected, whether to operate upon both eyes at one time, and for the details of each mode of operating with the accidents, which are liable to occur, I must refer you to the common text books on diseases of the eye.

The following facts, however, I wish especially to impress upon you: that the passage of a large hard cataract through the pupil is liable to so bruise the iris as inevitably to produce iritis; this disease is often caused by fragments of the cortical

substance resting in contact with the iris. To overcome these evils, it has been proposed, first to remove a portion of the iris as in iridectomy. If the extraction be performed some weeks after this preliminary operation, the lens not only passes through the pupil with less danger to the iris, but all the cortical substance is more readily removed. This mode of operating appears to be regarded with more and more favor by oculists in all cases of cataract in adults, whether hard or soft. In infancy there is less reason for iridectomy as a preparatory operation, since the iris is much less susceptible than in adults to the presence of portions of the lens lying in contact with it.

The disadvantages arising from the disfigured and enlarged pupils, occasioned by this mode of operating, are perhaps more than compensated by the increased chances of a favorable result.

I would urge upon you the careful perusal of all articles upon this subject you may meet.

SELECTED.

LECTURE ON THE IMPORTANCE OT THE APPLICATION OF PHYSIOLOGY TO THE PRACTICE OF MEDICINE AND SURGERY.

By E. BROWN-SEQUARD, M. D.

This extremely interesting lecture was delivered before the Medical Society of the College of Physicians of Dublin. The aim of the author is to show that by the knowledge derived from experiments on animals, as well as that derived from other physiological researches, from the knowledge we derive from microscopic anatomy, and even from simple descriptive

anatomy—especially as regards the base of the brain—combined with the careful study of pathological cases at the bedside, may be drawn a great many conclusions of importance to the practice of medicine, and we may be led to form a sure diagnosis in many otherwise obscure cases.

The lecture is so condensed that it is impossible to do justice to it by any abstract; and the subject is so interesting, and is treated in so masterly a manner, that our readers will be pleased to have laid before them the main portion of the text.

The author observes: "A complete revolution has been made in the practice of medicine within the present century by the study of experimental facts observed upon living animals; and if, together with this source of knowledge and that which springs from the comparison of those facts with morbid cases in our own species, we make an appeal to the other branches of physiology and also to normal anatomy, especially that of the nervous centres and of the nerves at the base of the brain, we shall find that to understand the symptoms of a large class of pathological cases in our own species becomes almost as easy as to read the alphabet. In fact, many of the most complicated, the most obscure, and the most unintelligible cases of nervous disease are as easily understood as the simplest case of bronchitis, or any other simple affection of the lungs, the bowels, &c., if we have the advantage of the light which experimental physiology and the anatomy of the base of the brain now afford.

"Suppose, for instance, a patient comes to us suffering from paralysis, an absolutely complete paralysis of the motion of one-half—say the right half—of the body, from the neck downwards. Suppose that, in addition to this paralysis of motion, he has also, on the same side, extreme hyperæsthesia or increase of sensibility in all those parts which are struck with the paralysis of motion. Suppose that we find not only extreme sensibility to touch—a symptom which we may measure accurately with a pair of compasses or the æsthesiometer—but also an extreme sensitiveness to tickling—a sensibility, by the way, quite distinct from the other. Let us suppose that we find, besides all this, that the sensibility to a prick or a pinch—in fact the sensibility to painful impressions of every kind—likewise the sensitiveness to changes of temperature—cold and heat—is also much increased. Thus you have these four species of sensibility—each of which—I repeat, is entirely distinct from the others—all greatly increased in that limb,

which, at the same time, is apparently dead, inasmuch as it does not possess the least power of motion. Suppose further, that in the limbs and part of the trunk in that same side of the body the temperature is found greatly increased, that the circulation of the blood in that side is more energetic, the arteries being *fuller;* or, in other words, that there is decidedly more blood there than elsewhere in the body.

"All these symptoms, observe, belong to one side of the body—*the right.* If, now, we compare them with what we find on the opposite side, they acquire still greater interest. On examining the *left* side of the body, we find an absolutely reverse condition. We find that all the four species of sensibility of which I have spoken are lost—absolutely gone—on that left side. We find that there is, on that last side, (in opposition to the state which exists on the right side,) a complete power of motion, not the slightest diminution of the power of the will.

"Suppose we go further, and inquire into the condition of the *fifth* kind of sensibility (assuming that their number is only five); if we look for the special sensibility existing in the *muscles*, that sensibility which serves to the direction of our movements, we find that this peculiar sensibility remains perfect in the limbs of that left side, and that the motions of weight, of resistence, &c., derived from the muscular sense, also remain perfect in those otherwise anæsthetic parts. There is, therefore, on the *left* side a complete anæsthesia of the four first kinds of sensibility of which I have spoken, notwithstanding the persistence of the muscular sense; while on the *right* side the condition is exactly the reverse—the muscular sense is gone, and the other four species of sensibility exist in a greatly increased degree.

"But what about the degree of heat in the limbs of the left side, and what of the circulation? Here, too, the condition of things is reversed; for on the left side there is not only a degree of heat much inferior to that on the right side of the body, but there is also an actual diminution of heat if you compare the state of those parts with their normal condition; in other words, there is an *absolute* not simply a *relative* diminution of heat on the left side. Thus, on the right side, the temperature of the body has increased, while on the left it has diminished. The case is similar as regards the circulation, which is less full in the left side than in a normal state.

"These features, I think you will agree with me in saying, are striking enough; yet there will be many others in the

same individual, upon which I cannot now dwell, but which are fully as interesting and equally difficult of explanation by the practitioner who is not perfectly *au courant* with the present state of physiological science.

"In *the face* (for example), on the side of the injury (admitting that an injury is the cause of these symptoms), there will be an increase of heat, an increase of sensibility, a contraction of the pupil, and a degree of occlusion of the eyelids; so that the eyes of the patient—if you look at them at the same time while open—are quite different one from the other. The eye on the side of the increased heat and hyperæsthesia seems smaller, because the opening of the eyelids is smaller than on the other side.

"All these effects we can produce in animals very easily: and it has been (in some respects) my good fortune to find a number of such cases in our own species. One of the most striking of them I saw at the London Hospital, in company with my dear and talented friend, Dr. Robert M'Donnell; in that case the various symptoms which I have described were as marved as possible.

"Now, what was the injury which produced all these remarkable effects? It was simply this—a complete transversal division of the right lateral half of the spinal cord in the neck; not simply a part, but, I repeat, the entire lateral half, *i. e.*, the posterior column, the lateral column, the anterior column, and the gray matter of that side had been divided transversely and completely. Owing to that injury all those symptoms existed.

"Now, I ask you, if any physician at the beginning of this century—not having the light afforded by the present state of physiological science, no matter how learned and able in other respects—had such a good living problem been presented to him, would have been able to understand such a case? Decidedly not. Nay, more, he would, in all probability, not have seen the case as I have described it. He would not have recognized the existence of some of the symptoms. He would likely have fallen into the same error as was committed by the great French Surgeon, Boyer, who had such a case, bvt who never found that tha sensibility was lost on the side still under the power of the will, until the nurse, who discovered the fact by a mere chance, told him of it.

"From such facts you will see the great importance of a thorough knowledge of physiology. The physiologist can have no difficulty in understanding such a case, for when he

knows that the spinal cord is the organ conveying the orders of the will to the muscles—that the nerve-fibres, serving for voluntary movement, proceed along the spinal cord, so that those which serve for the movement of the limbs on the right side of the body pass along the right side of the cord, while those serving for movement of the limbs on the *left* side of the body pass along the *left* side of the cord; it is quite evident to him that such a division of the cord as I have described will cause loss of motion on one side and not upon the the other. Again, the sensitive nerve-fibres which serve to the four first kinds of sensibility of which I have spoken, proceed in the spinal cord in such a manner as to go into the *opposite* side of that organ from that side of the body from which they convey the sensitive impressions—so that the nerve fibres of sensibility in my right arm and right leg, for instance, pass into the left side of my spinal cord, and *vice versa*. Hence a division of the cord produces loss of sensibility on the side of the body opposite to that of the injury.

"Equally simple is the explanation of the increase of heat in the limbs on the side of the injury. The nerves of bloodvessels pass into the spinal cord on the side corresponding to that of the limbs into which they go, just as it is the case for the nerves of voluntary movement, so that a division of the spinal cord on the right side produces paralysis of the nerves of bloodvessels in the right side of the body, in consequence of which, the impulse of the heart being less resisted on that side than on the other, there is a great afflux of blood, and also, as an effect of this increased quantity of blood, an increased quantity of blood, an increased heat, and (as a consequence of both the increased heat and the augmented quantity of blood) in a measure, also the increased sensibility of which I have spoken—the hyperæsthesia of the four kinds of sensibility.

"I cannot further dwell on this class of cases. Sufficient has been said, I hope, to show how important the light physiology can throw on symptoms which certainly would have been most obscure (to say the least) to even the most eminent and learned men of the beginning of this century, who did not know the physiological facts which have since been discovered.

"I will now produce another case. Let us suppose a man has sustained an injury, not of the half of the spinal cord, but an injury of one-half of the medulla oblongata at the level of the decussation of the anterior pyramids; not such

an injury as would destroy life at once, but an injury, a tumor, or a morbid alteration of sufficient extent to produce decided symptoms. In this case you would have all the symptoms which I have described in the former case, but with this difference, that as the anterior pyramids decussate there, an injury on the right half of the medulla oblongata would strike the fibres of voluntary movement belonging to that side previous to their making their decussation, or, in other words, before they pass from the right side into the left side; and it would also strike these fibres of voluntary movement that have come from the left side and have already made their decussation. In this case, therefore, there would be paralysis of motion on *both* sides of the body, while, as regards the state of the bloodvessels, the hyperæsthesia of the various kinds of sensibility, everything would be the same as in the former case.

"Let us take, now, a case of injury a little higher up, and we shall find other striking differences.

"A patient, I suppose, comes to you with paralysis of the external rectus on the eye of the right side. The face is also paralyzed on the same side. There is, besides, anæsthesia of the face on that side; while the left side of the body is affected with paralysis both of sensibility and motion. Here there is a case absolutely distinct from both the others. I cannot dwell, at length, on the remaining symptoms of the case, but I must not pass from it without noticing one striking feature. You will often find, in such cases, that the tongue of the patient is perfectly free; there is no loss of movement at all in that organ, and there is no impediment of speech. You will find that the facial paralysis is of exactly the same kind as that which takes place when the facial nerve, outside of the cranium, has been injured—*i. e.*, the muscles which communicate expression to the face and the orbicularis palpebræ are paralyzed. This case, therefore, is quite distinct from cases of hemiplegia arising from disease of the brain. As you are aware, in cases of paralysis arising from injury to the brain, the paralysis of the face is on the same side with that of the body, and the orbicularis is not paralyzed, while the tongue is almost always somewhat paralyzed. In the case I am now speaking of, the distinction is striking. The drawing of the face on one side, owing to the paralysis of the other side, takes place on the side of the paralysis of the body instead of on the other side—because the paralyzed side of the face is the opposite to that which is usually paralyzed. Besides all this

you will find that the sense of taste is altered in a good part of the tongue, on the side at which the face is anæsthetic. You will find further that the patient is in a state of considerable emotion—he will shed tears and cry easily; he will gape frequently, and while gaping there will frequently be a sudden jerk of the paralyzed limbs. There is also, generally, considerable giddiness and tendency to vomit. I am now mentioning only the principal symptoms.

"Now, I ask, what is the explanation of this case? Do you think that the most eminent men of the beginning of this century, not knowing the sciences of physiology and anatomy as we now know them, could have understood this case? Certainly not; and thus, you perceive, an acquaintance with physiology and anatomy is an immense help in the diagnosis of disease.

"The series of symptoms I have last described belong to a case of injury of the *pons Varolii*, striking, at the same time, one side of the trigeminal and of the facial nerves before they have made their decussation, which is at the lower part of the pons Varolii, and striking, also, one side of the sixth pair of nerves before it has made its decussation with its fellow of the other side, thus producing paralysis on the side of the injury just as if the injury existed in the nerve itself. You must not, however, suppose that an alteration of the pons Varolii will, under all circumstances, produce these effects. If the injury takes place a little higher up than the lower part of the organ, striking at the place where the facial nerve and part of the trigeminal nerve make their crossing, you will have these results; both sides of the face will be paralyzed, as regards sensibility and motion, together with the action of the external recti of the eye, and also the sense of taste in the anterior part of the tongue, while the paralysis of sensibility and motion in the body will be only on one side. In order to understand this it is quite sufficient to keep in view what the nerves of the face do when they reach the pons Varolii. When the injury strikes that nervous centre above the decussation, you will have, so far as regards the portions of the face and body which are paralyzed, the same effects as are observable in most cases of brain disease, viz., the paralysis of the face will be on the same side with the paralysis of the body. If, on the other hand, as already stated, the injury strikes the pons Varolii below the decussation, the opposite effects are produced.

"The question arises, therefore, how can you know whe-

ther the seat of the disease is in the pons Varolii if you have not that peculiar symptom of the difference of the sides, as regards the paralysis of the face and that of the body? There are several peculiar features, which I cannot dwell upon, which will answer that question. In the first place, if the injury is in the pons Varolii, you will find in the beginning of the affection one most important symptom, viz., extreme coldness of that side of the body which is to become paralyzed after a time, just the reverse of what will occur when the paralysis is complete, owing to a spasmodic contraction of bloodvessels preceding their paralysis and dilatation.

"I remember on one occasion, after one of my lectures at the Royal College of Surgeons in London, that eminent physician, Dr. T. Addison (whose modesty, like that of almost all truly great men, was in proportion to his great talents and extensive learning), did me the great honor of asking my opinion upon a case in which the symptoms were, besides the extreme coldness, already mentioned, in one half of the body, some tingling in the fingers, a very slight ptosis of the external rectus, some jerks in the external muscles of the face, on the side opposite to that of the injury (this is a symptom you do not find when the injury is higher up than the pons Varolii), also some sensations of tickling in the face (another symptom you do not find in cases where the injury is higher up than the pons); in fact the symptoms were such that although, as observed in the human species, they were new to me, who was at that time more of a physiologist than a practitioner, I had no hesitation, simply from the teachings of physiology, in pronouncing the case to be one of disease of the pons Varolii; and so it proved, as it gradually and successively presented all the symptoms which I have mentioned as characteristic of disease of that organ. As I had not, however, the advantage of making an autopsy of the case, you might think me very presumptuous in holding that I had made a certain diagnosis; but really with this class doubt is impossible, when the symptoms are combined, forming a group so definite and distinct that there is absolute certainty, even during life, as to their cause. It is not so when the disease goes higher up in the brain; we are then often at a loss, and it is extremely difficult to say, even, whether there is organic disease or mere temporary disorder of the circulation, and still less is it possible to say what part of the brain is the seat of the disease.

"I pass on to the consideration of another kind of hemiplegia. There is one kind of that paralysis perfectly distinct from all those which I have mentioned. We will suppose a patient comes to you with some slight stiffness and tendency to throw his limbs in a wrong way when he walks. There is not a very great paralysis, but rather a decided weakness, and hardly any loss of sensibility on one side of the body. He complains also of noises in the ear on that side, of feeling extremely giddy, and of having sometimes a tendency to turn round upon himself, like a top. Sometimes he reels as if he were intoxicated. He very frequently finds it impossible to walk straight forward. Sometimes, also, he has very great hyperæsthesia to sounds; at times, also, he has a sudden tendency to fall down—it seems to him as if he cannot keep up, and that he must fall; also, that if he takes hold of something he will keep up.

"This class of cases is, indeed, one of the most instructive of all kinds of hemiplegia. I have now collected more than twenty-two such cases—not all seen by me. According to the autopsy which has been made in a number of these cases, they are simply instances of reflex paralysis, not paralysis arising from the alteration or destruction, or, in fact, from any interruption of the conductors of voluntary motion—the paralysis in these cases is due to quite another cause. In this class of paralysis there is disease either of the petrous bone or of the base of the brain near the origin of the fifth pair of nerves, or near the place of entrance of the auditory nerve. There is, in this case, not a destruction but an irritation by a pressure (and not a very considerable pressure) on the crus cerebelli, or a small part of the pons Varolii, or the medulla oblongata. Place a tumor there which has encroached slightly and gradually on the parts of the base of the brain I have named, and the symptoms I have mentioned will appear. But let the injury go further, and the paralysis on one side of the body, viz., the side where the injury exists, will disappear; and yet the injury to the brain is greater now than it was before. From the moment that a real disorganization has taken place in the base of the brain the symptoms which existed at first disappear, and the paralysis passes from the right side of the body to the left side—the tumor being at the right side.

"I regret that I cannot, owing to the limited time at my command, explain the causes of this at length; but I shall endeavor to do so in a few words. At first, in a case of the kind I speak of, there is an irritation starting from the injured part

or parts, acting in the same way to produce a paralysis or an irritation from a nerve in any part of the body which causes a reflex paralysis. Acting upon the brain, it produces, by a reflex influence, an alteration of some kind which the microscope has, as yet, been unable to detect, and owing to which is due a paralysis. But why is it that, if the disease at the base of the brain progresses, the paralysis disappears on the side first affected and appears on the opposite side? The explanation is this: The part which, in the first place, was irritated, has now been destroyed altogether; there is no more irritation, and the paralysis consequently ceases on that side, but it passes to the other side of the body, because in the pons Varolii and medulla oblongata there are conductors of voluntary motion passing above their decussation to go up to the brain; and hence, if an injury takes place such as to destroy some of these conductors, there will be paralysis on the opposite side of the body.

"I intended bringing forward several other types of hemiplegia to show the great assistance physiology affords in explanation of such cases, but I am compelled to be brief. I must, however, mention one other species of hemiplegia—that due to hemorrhage in the cerebellum. In this case there are features which lead to accurate diagnosis; and many of these features have been discovered by experiments upon animals. One of these symptoms is vomiting; this is a constant feature of hemorrhage in the cerebellum. There may be also hyperæsthesia in some parts of the body—not the whole body, or even half, but in some portions. There will often likewise be amaurosis; this is generally due, not to pressure on the tubercula quadrigemina, as has been stated, but to a reflex action, as in the majority of cases there is no pressure whatever upon the tubercula quadrigemina. That it is due to a reflex action appears still more clearly when we consider what occurs in many of these cases; we may find the amaurosis existing in the left eye alone, in the right eye alone, or in both eyes—nay, more, we may find amaurosis passing alternately from one eye to the other in the same patient, although in all those cases the disease is only in one-half of the cerebellum, showing, in fact, that there is no persistency or uniformity of action in the production of amaurosis in these cases; or, in other words, that there is the variety we know to exist in effects due to a reflex influence.

"There is another kind of hemiplegia as to which I must say a few words—I mean that which is due to a lesion of the

anterior lobes of the brain. Phrenologists, you know, have regarded the anterior lobes as the organs of speech; but there have been many instances—Dr. Stokes mentioned a very remarkable one to me a few days ago—in which there has been destruction of these parts without any deprivation of speech. But the question remains (and it is an interesting one), what occasions the loss of speech when such loss takes place? As regards this question I shall, in a moment or two, have to point out how great a variety of symptoms may be produced by a lesion of almost every part of the brain. The deprivation of speech I hold to be a reflex phenomenon; and that it is so, we have almost a proof in the fact that it often varies very much in the same patient, according to circumstances which physiology has, as yet, been unable to detect, but certainly with the lesion of the brain still continuing unaltered. It is worthy of remark, too, that the loss of speech is usually unaccompanied by any loss of movement in the tongue; there may be perfect freedom of motion in the tongue, and the deprivation of speech arises from the circumstance of the patient being *unable to give expression to his thoughts;* and this inability extends not merely to speech, he is equally powerless to express ideas either by signs or by writing. The paralysis, in fact, is a 'paralysis of the organ of expression of ideas;' and it is remarkable that this occurs, while the individual may remain, in other respects, in full possession of his intellectual faculties, at least so far as we can judge of this possession. One of the cases of that kind I have seen was that of a clergyman, a man of remarkable intelligence. He had not lost the mechanical part of the power of speech, for he articulated a few words very distinctly—but they were sounds devoid of meaning; he was equally unable to express his thoughts by writing, or even by signs. Even when he was told to express 'yes' by lifting up one finger, and 'no' by lifting up two fingers, he was unable to do it, and showed signs of great distress at his inability; and all this, although he appeared, in other respects, very intelligent.

"I pass on to notice another form of disease showing the importance of a knowledge of physiology. It is a form to the discovery of which I have been partly led by experiments on animals. A patient may come to you complaining of pain in the back, of a pricking sensation in both arms, with some degree of itching, burning, or some subjective sensation of alternate cold and heat, or some curious variety of cutaneous eruption, differing from those you have usually to deal with when

they are not due to nervous disease. You may find, also, some weakness or even a great paralysis in the two upper limbs; jerkings in those limbs, likewise a stiffness in some of the muscles, and tenderness under pressure. If you do not know the physiological meaning of all these symptoms, you will be led to suppose that there is some local affection—rheumatism, perhaps, of both the arms. You will think it very strange that you can find no description of any such disease in books—yet the explanation of all these phenomena, when read by the light of physiology, is very simple. The symptoms depend altogether on an inflammation of the nerves of the arms at or before their exit from the spine in the lower cervical region and the upper dorsal region. The neuritis is usually accompanied by a local spinal meningitis; all the symptoms arise from irritation of the motor and sensitive nerves, and also of the nerves of bloodvessels. If, then, you meet such a case as I have described, and applying your physiological knowledge you arrive at the true character of the injury, you may, by adopting a certain course of treatment, cure, or, at all events, greatly mitigate the disease. I have met many cases of the kind; and, with the exception of one, which I saw in consultation with Mr. W. Adams, of North London, and which terminated in death, all the cases have been either cured completely or more or less ameliorated. The treatment consists in a most active blistering of the spine in the region of the disease; also, in the application of dry cupping. Injections of narcotics have also been resorted to; but I repeat that the principal part of the treatment consists in the repeated application of blisters to the spine. Internally I have also employed iodide of potassium; but what share it has had in the cure I do not know.

"I intended to have brought forward many varieties of cases of disease of the spinal cord, but time does not allow of my doing so. I will, however, say that physiology has demonstrated these most important facts—that the spinal cord, in its most central part, which is decidedly insensible and inexcitable in its normal state, may become exquisitively sensitive and excitable under the influence of inflammation or congestion, and that when the gray matter has become sensitive, it may occasion all those strange sensations and other symptoms complained of by patients attacked with either myelitis, or great congestion of the gray matter—viz., pricking as by pins and needles, formication, itching, feeling of heavy pressure, or tightness, coldness, or heat, &c., and jerks, trembling,

cramps, convulsions, contraction, &c. In cases of paraplegia this group of symptoms is generally due to a special alteration in the condition of the spinal cord, and the part of this group concerning sensation cannot be produced without congestion or inflammation, and characterize essentially these two diseases, especially the latter; and if you do not find them in cases of paraplegia, you may be convinced that the spinal cord is free from congestion, and still more free from inflammation.

"Keeping in view the object of this lecture, viz., the importance of a deep knowledge of physiology in the practice of medicine and surgery, I now proceed to notice the distinct and almost opposite features of two cases of fracture of the spine in the cervical region. Two patients, I suppose, are brought to you—each having sustained an injury of that portion of the spine, and having, in consequence, a complete paralysis of the trunk and limbs. One of them is almost pulseless, extremely cold, and covered with a clammy perspiration. He appears almost like a dead man; there is no contraction of the muscles, the limbs hang loose and dead, his breathing almost gone, his pulse—not only very faint, but extremely slow—from 40 to 45 in a minute. If you commit the fault of bleeding him, you find that the venous blood flows out red like arterial blood—flows out, not with a great impulse, for the heart is very weak and almost in a state of syncope, but still it flows out not like venous blood—it has an impulse like arterial blood.

"Now examine the other patient. In him the symptoms are almost the exact contrary to those in the former. The limbs are stiff and rigid; the pulse unnaturally high; the heart's action much excited; the heat of the body, not only higher than is usual in the limbs, but absolutely higher, and by many degrees, than the temperature of the blood in health in man. If you bleed him, which may prove useful, you find that the venous blood is darker than usual, and comes out without any trace of impulse.

"Now what is the explanation of these two cases? How is it that one of these patients is in a state of syncope, and the other in a state of asphyxia? It is found, by experiments performed upon animals, that in the former of these two cases the cause is an irritation—perhaps extremely slight, for the slightest prick may be sufficient—of the spinal cord, the effect of which is a stoppage of the heart's action, so that it beats with diminished force and rapidity, and as a consequence of this condition of the heart all the other symptoms above described ensue. In the other patient, on the contrary, the spi-

nal cord has actually been cut across altogether, and the patient is in a far *worse* state, in reality, though he *seems* to be far more alive than the other. He *seems* to have the power of reaction which we wish to find in patients, yet the danger of his state is far greater—in fact, he is sure to die, while the other, by means of an operation (trephining, or resection of the spine, an operation which was performed by Dr. R. M'Donnell, to-day, upon a patient in this city), may possibly survive.

"I proceed now to make some remarks on symptoms of brain disease. As you are aware, our view of the symptoms of disease of the brain proper—i. e., the cerebral lobes—is, that an injury there produces paralysis by striking the organ of the will, that there is a paralysis of the will at least for that part of the body which is paralyzed, and that if other symptoms occur, they are due also to a loss of function of the part altered in the brain, or to pressure upon neighboring parts. I have not time fully to demonstrate that the symptoms of brain disease are generally due to a reflex action, but I shall show (I hope satisfactorily) that the admitted view is absolutely untenable. You are all familiar with the great variety of symptoms presented in brain disease. Take, for instance, facial paralysis. In cases of disease of the brain, paralysis (as you know) does not exist in the orbicularis, but in the other muscles of the face. Now if it is alleged that when, in cases of disease of the anterior lobe of the brain, for instance, there is facial paralysis, it is because the nerve fibres of the facial nerve go to that part. I am perfectly willing to admit it; but let us take a case of injury to a different part of the brain—say, for instance, an injury in the posterior lobe—how will you explain facial paralysis in this case? Do the nerve fibres of the facial nerve go to the anterior lobe in one case, and to the posterior in the other? Surely not. In fact, the consequence of such a hypothesis would be that there is absolutely no part of the brain which would not be the spot to which the nerve fibres of the facial nerve go. If you can suppose such a hypothesis possible, I ask you to reconcile the facts with what anatomy teaches—viz.: that the facial nerve goes to a certain part of the pons Varolii, and no higher; so that besides the absurdity of supposing that the facial nerve goes to every part of the brain, and each part containing all these fibres, there is likewise the anatomical impossibility which arises when we examine the course of the facial nerve. Again, take another instance. The tongue, as you are aware, is in most of these

cases of disease of the cerebral lobes, more or less paralyzed; there is some difficulty in drawing it out in a straight line—also some slight impediment in the speech, owing to paralysis of some of the fibres of the ninth pair of nerves. How will you reconcile the existence of that paralysis in the majority of cases, with the fact that we do not see the fibres of the ninth pair—the hypoglossal nerves—going up higher than the medulla oblongata? Here is a patient who has a complete destruction of one-half of the pons Varolii; mark, that that organ must be the place of passage—if there is any such passage—of the fibres of the hypoglossal nerves going up to the brain. Therefore, when one-half of the pons is diseased, there must be a paralysis of the tongue; yet in most cases of disease of the pons there is no paralysis of the tongue, so that both anatomy and this clinical fact prove that the hypoglossal nerves do not go to the cerebral lobes. How, then, you will explain the fact that disease in any part of these lobes may (as we know, by experience, it does) produce paralysis of the hypoglossal pair of nerves, I leave you to decide. To me it seems clear, that to hold that when an injury to any portion of the cerebral lobes causes paralysis of the ninth pair, or of any other nerve, it is because the paralyzed nerves go to that part of the brain, is decidedly wrong. If you examine a number of cases of brain disease, especially of an acute character, such as cases of quickly enlarging tumors producing irritation, and especially tumors pressing on the dura mater, you will find that for a tumor in one and the same part of the brain there is, in some cases, no symptom at all produced, and in other cases you may find any symptom whatever. I do not think you could point out any feature of nervous complaint that you will not find existing in some one or other of the recorded cases of injury to, or disease of, any particular part of the brain. Nay more, even in one and the same individual, with one and the same persistent disease, you will often have a great change in the symptoms. He may be paralyzed to-day, another day he may not; you may, in fact, have every variety of phenomena, or no phenomenon at all, all arising from one and the same cause; so that unless you go the length of supposing that each individual part of the brain possesses every function whatever, and has the effect of acting on every part of the body in a direct way, you cannot explain these facts. Mark, that in some cases of injury to, or disease of, the cerebral lobes, there are no phenomena at all; so that, while on one hand, you are driven to suppose that there is no part

of the brain which does not contain all the nerves of the body, you are, on the other hand, forced to conclude that there is no part of any nerve of the body going to the cerebral lobes. Such a hypothesis is obviously impossible. I have time only to say that the explanation which I have ventured to offer of these phenomena is, that they come under the class of effects produced by reflex action.

"I shall now pass to quite different cases, but also due to a reflex action, and I will first speak of syncope when induced by a blow on the stomach. Experiments on animals have shown me that in these cases the syncope is produced by a reflex action through the abdominal sympathetic ganglions, the spinal cord, and medulla oblongata, and, at last, the par vagum. I have often and often tried the experiment on animals, of crushing the ganglions of the sympathetic in the abdomen. In such cases there was sometimes a sudden arrest of the heart's action, in other cases only a temporary diminution in the beating of the heart, while in still other cases there was hardly any effect produced. In those animals in which the effect on the heart was produced, I waited till recovery was established. I then divided the par vagum, after which I crushed again the ganglions; not the least effect was then produced on the heart's action, clearly showing that the transmission takes place through the par vagum. In those cases in which the heart is stopped, whether from the cause above assigned, or any other, such as drinking very cold water when in perspiration, or an emotion, etc.,—in those cases of reflex syncope when the patients are on the verge of death, and would almost surely die if nothing were done for their immediate relief—in such conditions there is one means of restoring life, which I have found by experiments on animals to be of the utmost importance, and so much so that very frequently, even when the action of the heart was quite stopped, I have been able by simply pressing on the sternum, and by giving a hard push to the heart, to make it beat again; and after repetition of the same means to make it resume its action. It will not beat long if the cause of the syncope is a powerful one, but still it will beat; and if you continue the use of the means mentioned, it will continue to beat, and in that way you may succeed in reviving a patient. But this is not all. If you add to that cause of revival another, which is most powerful, and which is directly the reverse of what John Hunter tried upon himself when he found he was in a state of syncope one day at the College of Surgeons—if instead of making the patient breathe as quickly as he can

you stop his breathing altogether, just as if you were trying to kill him by suffocation, you revive him. By producing a state of asphyxia for about half a minute, the patient may be saved; he will have a struggle, and come out of it very quickly. Nothing, indeed, is more powerful to make the heart beat than an accumulation of carbonic acid in the blood. Whether I have been right or wrong in maintaining, as I have done, that the normal and abnormal beatings of the heart, when very tumultuous, depend chiefly upon an irritation by the carbonic acid of the blood—whether I am right in this respect or not—there is no question that if you produce temporary suffocation in these cases, you make the heart beat again, and beat with force. I should add that I have not the merit of having discovered this fact, as I find that in an old book, entitled the *Surgeon's Mate*, and published more than 200 years ago, a writer of the name of Woodall has mentioned it as very important. He, however, does not say on what he grounded his view. There are some other features about syncope of great importance. In any case where the circulation is impeded, you may in a moment throw one or even two pounds of blood into the trunk and head, by simply pressing hard on the four main arteries of the body. If you press those four main arteries, you prevent the circulation going on in them, and at once a considerable quantity of blood returns from the venous system to the trunk, especially if the limbs are kept up so as to allow gravitation to help the movement of the blood.

"A few words now upon asphyxia. There are experiments which show, as clearly as possible, that if you take two animals, one of them having had the temperature of its body very much diminished, the other at a normal temperature, and if you dip them both into water at the same time, the one which has had its temperature reduced will survive twice, three times, and sometimes even five times as long as the other—the duration of life under water being sometimes extended to twelve or fifteen minutes. The greater the previous lowering of temperature, the longer the duration of life There is another very interesting fact. It is well known that persons who have fallen into water have, in many cases, been drawn out and revived after an immersion of a number of minutes. Now, in experiments performed upon animals by applying galvanism to the par vagum so as to stop the heart's action—which is an effect that a fall into water will sometimes produce, by a reflex action from the influence of cold on the skin, or by an emotion—we find life will last much longer;

in other words, the animal will be able to survive a much longer time when dipped under water, from having had an attack of syncope just before. This case, then, is exactly the reverse of the former. In one, syncope is cured by asphyxia; in the other, asphyxia is rendered less mortal because syncope previously existed. I need not stop to show that all these notions we owe to physiological science.

"I shall now say a word upon poisoning. Poisoning often produces death by causing such a diminution of temperature as is incompatible with life. Take, for example, two animals which have been poisoned with opium. Supposing the temperature to be cold in the room, lay one of them near a fire and covered carefully with warm clothes, and let the other be exposed to the cold in a corner far from the fire. You will find, *cæteris paribus*, that the one which is kept warm will survive, while the other will die. This fact we find with almost every organic poison, viz., that there is considerable diminution of temperature produced—if not, *per se*, sufficient to occasion death, enough, at any rate, to add a powerful cause to the other causes existing. Now this diminution of temperature is a feature which we can fight against; and it is, therefore, of the utmost importance, in cases of poisoning, to use every means to keep up the temperature of the body."—*Dublin Quart. Journ. Med. Sci.*, May, 1865.

ON PREVENTIVE MEDICINE, AS ILLUSTRATED IN THE PROPER USE OF FOOD.

Mr. Wilson thinks that we are all, especially our children and youths, much under-fed. He recommends three ample meals of mingled animal and vegetable food; and will have "no putting off of the stomach with bread and butter and slop as the effigies of two of the three meals of the day." Mr. Wilson says:

"But a period comes when milk is no longer the diet of children, and when custom, originating, as we have seen, in Nature's promptings, has determined the necessity of three meals in the day. The infant demands more than three meals, and makes no distinction between the day and the night. The

day of the infant is a day of twenty-four hours; the day of childhood, as of the remainder of life, has a duration of twelve to sixteen hours. The three meals at present under consideration are the morning meal, the mid day meal, the evening meal. These meals represent the wants of the body arising during the intervening intervals. The morning meal is intended to supply the moderate waste of the night, the mid-day meal the active waste of the morning, the evening meal the active waste of the afternoon. The amount of the three periods of waste is pretty equal; the amount of the supply should be equivalent to that of the waste.

"I am desirous of impressing upon my hearers my opinion and firm conviction that food is not only a necessity, but in civilized life a three-fold necessity, and that the three meals should each represent the third of the nourishment of the day, and be so apportioned as to comprehend an equal amount of variety and an equal amount of nourishment. In the primitive life of the laboring class this law is fully appreciated, and is acted upon to the full extent of their means. With the exception of a somewhat more bulky mid day meal, the morning meal and the evening meal do not far diverge from the standard of the mid-day repast.

"But the educated classes are apt to fancy that they possess a knowledge superior to that of Nature, and the result is a perversion of the law of nourishment that leads to the development of debility and disease. A careful, well meaning mother, from purest ignorance—another expression for superior knowledge, the "little" knowledge that is so proverbially dangerous—will tell you that she conforms to the law of Nature in providing for her children three meals in the day. She will describe those meals as breakfast, dinner, and tea, and you will find the composition of those meals to be as follows: A vegetable breakfast, namely, bread and butter, with tea and a little milk; a dinner half animal and half vegetable; and a "tea," vegetable like the breakfast. Here, then, we find education bringing about a total change in the diet of man. Born an animal feeder, he is quickly transformed into a vegetable feeder: that is, more than two-thirds of his diet is vegetable and the remaining third only animal, the exact opposite of that which I consider should be the standard diet of children, namely, one-third vegetable and two-thirds animal.

"My deduction from these premises is, that children are almost universally under-fed, and that the majority of the diseases of children arise from the debility of constitution in-

duced by this habit of under-feeding. If I am right in this view, preventive medicine may do much in the prevention of disease by correcting an error so widely spread.

"The diet of children of all ages should be, a substantial breakfast, with animal food in some shape; a substantial dinner of meat, vegetables, and cereal pudding; and a substantial supper, also consisting, in part, of animal food, The drink may be milk, tea, cocoa, and, possibly, beer. I would call this the diet of health; a diet capable of making a strong body and also a strong mind; and a diet capable of preventing disease. Compare it for an instant with the milk-and-water and bread-and-butter diet of some establishments: the meagre dinner of meat, and the miserable grouting of rice and amylaceous pulp. Rice and amylaceous pulp should have no place in the diet of health, but should be reserved for the sick room.

"Born in prejudice and matured in prejudice, it is the struggle of a lifetime to throw off the trammels of prejudice. We are apt to attach a peculiar signification to the terms which we are in the habit of employing. Ask a person what he usually takes for breakfast, and he will pretty certainly begin his enumeration with the word "tea," the mere drink of the meal; it is, in truth, with him a mere break-fast, instead of being, as it ought to be, a substantial morning meal. The dinner of laber is the luncheon of fashion; then follows the mildly alkaline and stimulating drink that is termed "the tea;" and last of all comes the supper, the late dinner of fashionable life. We have, therefore, before us a succession of three meals and an intermediate drink, but the drink precedes the last meal; and, therefore, the orderly matron, who is more attentive to her 1, 2, 3 than she is to the intention of the daily fare, prescribes for her children breakfast, dinner, and tea—two slops and a meal. But let her, in good English phrase, call the children's meals breakfast, dinner, and supper, and then we immediately obtain two dinners and one slop, the breakfast—an obvious improvement. I have secured to many a child a reasonable evening meal by suggesting to the mother the mere use of the word "supper" as the name of the third meal. No human being could call bread and butter and tea by the hearty name of supper.

"Assuming that the amount and richness of the supply of food should be determined by the offices which it has to perform, there is no period of life when more food is required than in childhood and youth. The hard-worked laborer in a

long summer's day scarcely exhausts a greater quantity of nutritious matter than a growing boy of ten or twelve years of age; in the laborer the consumption is waste; in the growing boy it is bestowed in the construction of the body, in developing and building up the future man. And it is no uncommon thing to find that although the general construction of the body has been fairly performed, there is some one organ of the economy that has fared less well than the rest, and that part not uncommonly the skin; hence the origin of acne, of the ringworms, *et hoc genus omne.*

"If it be admitted that food is the source of the elements of which the body is composed, what kind of body can be expected in the case of a deficient supply of food, whether that deficiency proceed from actual want or from some perverse theory of refinement founded on a false conception of the nature and objects of food, and of its direct convertibility into the flesh and blood of man? Parents are too apt to take their own stomachs as the standard of diet of their children; a cup of tea and a slice of toast suffices for them, so it must suffice for the little ones. I knew a lady who brought up her children on mutton alone, because she herself could digest nothing but mutton. Her children were a feeble, puny, sheepish race, always in the doctor's hands. A mother, in anticipation of the full meal at seven o'clock, can afford a light lunch; but she unfortunately concludes that, because a light mid-day meal is good for her, a spare dinner is equally proper for her children. She has heard somewhere that suppers are heavy and interfere with sleep; so that the children must be content with their tea, and go supperless to bed. Parents have rights over their children, but not the right of feeding them in such a manner as to make them the subject of disease. Such parents become the authors of a puny and degenerate race, and are unintentionally traitors to their country,

"If the two periods of life already adverted to be important in in their influence on the future man—namely, the period of infancy, ranging from birth to the age of two years, and the period of childhood, ranging from two years to seven years—the next two periods, namely, those of boyhood and youth, are equally so. While the food of the infant and the food of the child are abundant and regular, the food of the boy and the food of the youth should be the same. Both are occupied in the great business of growing life; on both are dependent the future man, for his strength and for his manhood."—*N. Y. Med. Journal. Half-Yearly Ab. of the Med. Sciences, etc.*

EDITORIAL AND MISCELLANEOUS.

AN EXTRAORDINARY CASE OF ADHESION.

By WM. MEACHER, M. D., of Pardeeville, Wisconsin.

About a year ago Mr. Kinney, of Marcellon, came to me to have his thumb dressed, having got it injured while hitching a yoke of oxen to a wagon, by getting it caught in the chain.

Upon examining it, I found that a large piece of flesh had been jammed off, exposing the end and under surface of the bone. The piece of flesh fell on the ground, and Mr. Kinney picked it up, (thinking it a good plan to "save the pieces,") and replaced it, wrapping the thumb up with a bit of rag—in which condition it remained until I saw it, about two hours after the injury.

After looking at it, I hardly knew what to do with it, for it appeared evident that if I removed the piece, (which I did not do at all,) and cut off the end of the bone, I could not get flesh enough to cover the stump. Neither did I think I could get flesh enough to cover the stump, by amputating at the first joint; for the piece that came off reached half way to the second joint, and the patient objected to having it amputated above the joint. So, hardly knowing what else to do, I secured the piece in its place with some small strips of adhesive plaster, and left it for the present.

It remained so until the next day, when I examined it again and found the piece apparently alive and healthy. So I

concluded to let it alone as long as it kept so, which I did until it grew fast, and sound.

The Princeps Pollicis artery was torn off opposite the joint, and drawn out some; and when the piece of flesh was replaced the end was left sticking out at the side of the thumb, and I was obliged to touch it with caustic to stop its bleeding.

The patient was over 60 years old. The piece was not cut off, but jammed, or pinched off, and imperfectly replaced, or in other words, coaptation was imperfect.

We publish with pleasure the article of our esteemed correspondent, yet are compelled to say, that what it narrates is almost too much for our credulity, and makes us think that the patient has misled his surgeon—and possibly himself, into the supposition that the part was actually severed from all vascular connection with the body. This is so unlike what we every day observe, that we could only believe such a thing possible after undoubted experimental demonstration. As *apropos* to the subject, however, and tending to the credibility of the case reported by Dr. Meacher, we quote from Abernethy's Lectures on the Physiological views of John Hunter:

"Mr. Hunter was convinced that life might remain in a dormant state, in detached parts, for sixty hours. He therefore could not wonder at the facts with respect to transplantation or engrafting of portions of animal bodies with which he was acquainted; yet he says that the transplanted part must have life, to accept of the union, because he believed, that a correspondent and co-operating action was necessary for its accomplishment.

"Mr. Hunter observing how firmly the gum sometimes attached itself to a transplanted tooth, and thinking the comb of a cock resembled the gum in its texture, transplanted the tooth of a dog and set it in the comb, where it became firmly fixed. He next transplanted a gland taken from the abdomen of a cock, to a similar situation in the belly of a hen, where it also became attached, and as he believed, nourished, for he probably thought he had injected it from the general arterious system. The uniting medium by which it is firmly connect-

ed, is certainly very vascular, yet I do not see that any injection has passed into the vessels of the transplanted gland. The preparation is in the Museum, so that you can examine it for yourselves. Mr. Hunter probably believed that it was nourished, from its neither wasting nor decaying. As, however, the evidence was not very distinct, he next transposed the spur of a young hen, to the leg of a cock, and that of the latter, to the leg of the former bird, which spurs grew, and thus set the subject at rest in his mind. It may seem, however, curious, that the hen's spur grew to a greater size on the cock's leg, than it would have done upon the parent animal, which Mr. Hunter considered as a proof of the greater vigor of constitution of the male bird."

HEREDITARY ERYTHEMA.

Reported by C. A. WHITE, M. D., of Iowa City, Iowa.

A few months since I was called to vaccinate a man of 36 years, a native of Wales, together with his son, a lad of 8 years, both of whom, I noticed, had very red faces. The father informed me that they had both been so from their birth. The redness resembled in appearance what we often see in summer in cases of persons having exposed to the sun for a short time, parts of the body which are usually covered. It would disappear under pressure, and immediately reappear when the pressure was removed. Both have always enjoyed the most robust health, and have never felt pain in the parts thus affected.

It covered the whole face *symmetrically*, extending from just beneath the chin to the lower portion of each temple, thence forming an obtuse angle on the forehead. This outline was identical in both father and son. The skin had no appearance of tumefaction nor disease.

THE TREASURES LOCKED UP.

The Surgeon General has forbidden all medical officers giving information of officially recorded facts of the medical and surgical experiences of the war. All outside of official positions must fold their hands and wait for the scientific feast preparing in the official kitchen at Washington, after the maxim, probably, that *too many cooks spoil the broth.* This does very well for those inside, but we understand there are some outside experts who claim that they might be let into the labor, with no damage to those now at work at the vast amount of raw material, and with infinite advantage to the great public, at whose expense these records have been made and preserved. If this has come to be the general policy at Washington, we may expect soon to hear that Horace Greeley is shut out from access to the archives in his department of history.

Dr. Brandt, a distinguished Scandinavian Physician, who has recently been traveling in this country, in a communication to one of the journals of his own country, speaks highly of our hospitals and the prominent members of the profession in America. Of Prof. Brainard he says: "He stands foremost in the country, and is remarkable for his originality as a Surgeon, and as a Lecturer, he is clear, comprehensive, and practical."

Obituary.—Died, of Dysentery, Josiah Lee, M. D., at Fairmount, Vermillion Co., Oct. 13, 1865.

SOUTHERN MEDICAL JOURNALS.

It is with no common satisfaction that we receive the promise that at no distant day, our editorial table will again be graced by an exchange list from the Southern States. Thus one after another, and in rapid succession, are the traces of the great conflict passing away, and while all acrimony of feeling seems to be fading from the minds of men North and South, there certainly will be no lack of fraternal spirit between the medical profession of the two portions of our country—for their work has been the same in both armies—simply a labor of kindness to brave and unfortunate men, regardless of the uniform in which they were clad. The question of the practibility of "peaceable secession" has been settled in a way that the blind may see, the deaf hear, and the unlettered read, and the experiment is not likely to be made again. Let us then forget the past, and unitedly address ourselves to the common work before us.

We have received the following notices:—The Richmond *Medical Journal* will be issued at Richmond, Va., commencing in December. It is edited by E S. Gaillard, M. D., W. S. McChesney, M. D. It will be a monthly of 80 or 90 pages. The subscription price being $5, payable in advance.

The Savannah *Journal of Medicine* will be issued from Savannah, Ga., January, 1866. It will be a bi-monthly of 72 pages, at $4 per annum in advance. Editors—Juriah Harriss, M. D., Jas. B. Read, M. D., J. G. Thomas, M. D.

The *Medical and Surgical Monthly*, to be published at Memphis, Tenn. The first number will appear January, 1866. A monthly of 64 pages. Terms for one year, $6; half-year, $4. Editor—Frank A. Ramsey, A. M., M. D.

RELATIONS OF THERAPEUTICS TO MEDICINE.

It will be admitted by most thinking men that the study of diseased or healthy organization has revealed more of the effects than of the essence of disease. So subtle are the conditions by which the equality of life is preserved, that, in a vast proportion of instances of death, the most refined anatomy and chemistry fail in discovering a commensurate change or in explaining why what was a living creature yesterday, lies before us in a few hours a decomposing mass of clay. Hence, we must be cautious in extensively adopting any therapeutical system which is solely based on inference from visible organic change. In the present imperfect state of our knowledge, we must not neglect that study of therapeutics which is essentially experimental and inductive; and if there be one thing wanting more than another in our science, it is that men should know the nature and difficulties of therapeutic evidence. If, as I have often heard Professor Acland observe, only a few of our well-instructed brethren who are in charge of our public institutions, well aware of the established laws of disease, whether essential or non-essential, and good observers, were to take up any one remedy, whether old or new, say digitalis, and faithfully record on the one hand the character and history of the case, and on the other the results of the use of the particular medicine, or other therapeutical proceeding, we should ere long have such a mass of unbiased statement of facts that safe conclusions could be drawn. Until this is done, the position of therapeutics will be an inferior one. It will not be any trustworthy guide in practice, except in a few salient instances, and will be powerless in its other great function of being the key to, and the test of, pathologic conclusions.

To bring therapeutics up to this level seems to be the great desideratum. We may fairly hold that the time is ripe for the commencement of its study with the view to its higher functions or development. Without placing limits to the material investigations in which we are aided by the microscope and by chemistry, we may believe that our knowledge of the intimate structure and composition of the solids and fluids of the body is so extended as to give to the therapeutist reasons for holding that he is now far better acquainted with the living organism than he was a quarter of a century ago; and that so he has a broader and more secure foundation to build upon. But the therapeutist must also possess assistance of

another kind. He must know the principles of accurate reasoning; he must distinguish between the *post hoc* and *propter hoc*; he must be content still to deal with vital phenomena as constituting a class of the nature of which our knowledge is so deficient, that we have still to study their modifications by external agents, experimentally, and without as yet much reference to their relations to structure or to vital chemistry; he must take into account the laws of periodic action in health and in disease, and determine, or seek to determine, as he proceeds, whether the simplest form of acute local as well as of general disease is not under some of these wonderful laws; he must study the question as to whether medicinal interference extinguishes morbid action, postpones it, or, by breaking its circle, as suggested by Professor Boeck, though this be followed by temporary good, deranges the process which is to end in its removal; he must well understand that certainty in medicine must be approached by the balance of probabilities, and have a full insight into the difficulties of medical statistics, which result from the labors of more than one observer. Other circumstances will suggest themselves to you—as the influences of locality, of race, of age, sex, habit, and previous history. I will not dwell on them, further than to remark that, had Broussais attended to one of them, in particular, he would not, I think, have fallen into the error of declaring the non-existence of essential fever from observing disease within a narrow circle of the world.

If therapeutic science is to advance, it must be followed and studied in the most severe scientific spirit.—*Dr. Stokes' Address before Brit. Med. Assoc.*

ON CHRONIC ULCERS.

By FREDERICK C. SKEY, F. R. S., etc.

The more chronic the ulcer, the larger its size; the more aged the subject, the more remarkable is the influence of opium in effecting its cure. Treat such a case of chronic ulcer of the largest size, having a pale, flat, bloodless base, a high mound of lymph around it, covered by unhealthy integument, the sore pouring out a large quantity of watery ichor, satura-

ting the linen stockings and other appliances—I say, select such a case, occurring in old age; give such a man ten or fifteen drops of tincture of opium night and morning, leave his bowels alone, and observe the base of the sore in five or six days; it will exhibit a number of minute red points, which, daily increasing in number, will rise up in the form and identity of healthy granulations, and cover the entire surface of the ulcer. Contemporaneously with the gradual elevation of the base of the ulcer is the descent of the surrounding eminence, and the commencement of the process of cicatrization. If I desired to select an ulcer on behalf of a student, with a view to illustrate the character of perfect granulations as they appear in a thoroughly healthy example, I would select an ulcer which had been treated by opium in preference to any other. If it be supposed by any man having limited experience in the employment of opium, that any evil to the constitution attaches to the use of that valuable agent, I can only reply that its salutary action on the ulcer is obtained solely through the healthy influence it exercises on the constitution. Judiciously employed, no drug in our pharmacopœia is more innocuous.

Deaths by Cholera in New York.—The deaths by cholera in the city of New York, during previous visitations, foot up as follows:

In 1832 there were 3,513 deaths. In 1834 there were 971. In 1849 there were 5,071. In 1852, 374. In 1854, 2,509. In all other years, 137. Total, 12,775.

Married—At the residence of the bride's father, George W. Gideon, October 30, by Rev. T. N. McCorkle, Dr. R. T. Richards and Miss Speedy Gideon, and Dr. B. K. Shurtleff and Miss Lydia Gideon, all of this town.

Dr. Valentine Mott's estate was valued at $400,000. He bequeathed his anatomical museum to the New York Medical College.

OHIO STATISTICS OF THE INSANE.

The last report of the Central Ohio Lunatic Asylum gives the occupations of all persons admitted in twenty-six years. In dividing the number of each occupation by the number of the insane it has furnished in that time, we have the following:

Speculators	1 to 24
Artists	1 " 58
Clergymen	1 " 84
Students	1 " 97
Tailors	1 " 188
Merchants	1 " 154
Lawyers	1 " 169
Physicians	1 " 184
Farmers	1 " 195
Butchers	1 " 215
Blacksmiths	1 " 315
Laborers	1 " 431

The report gives 22 crazy loafers, 23 physicians, 35 clergymen, 1,195 farmers, for the period covered.

We have received the following books from the publishers: Lectures on Inflammation, being the first course delivered before the College of Physicians of Philadelphia, under the bequest of Dr. Mutter. By J. H. Packard, M. D. Philadelphia: J. B. Lippincott & Co. 1865.

Stimulants and Narcotics—Their natural relations with spinal researches on the action of Alcohol, Ether and Chloroform on the Vital Organism. By Francis E. Austie, M. D., M. R. C. P. Philadelphia: Lindsay & Blackiston. 1865.

Researches on the Medical Properties and Application of Nitrous Oxide. By Geo. J. Zeigler, M. D. J. B. Lippincott & Co. 1865.